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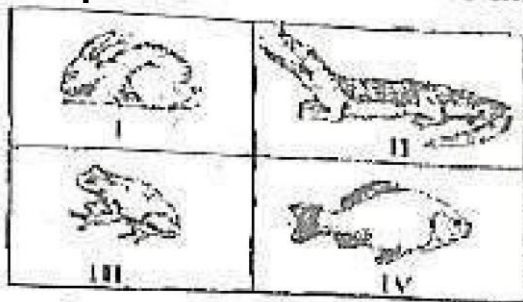
BIOLOGY 2010- 2018

JAMB Past Questions

**UTME
2010
BIOLOGY
QUESTIONS**

1. Which Biology Question Paper Type is given to you?
 - A. Type A
 - B. Type B
 - C. Type C
 - D. Type D
2. Which of the following characterizes a mature plant cell?
 - A. the cytoplasm fills up the entire cell space
 - B. the nucleus is pushed to the centre of the cell
 - C. the cell wall is made up of cellulose
 - D. the nucleus is small and irregular in shape
3. Which of the following is NOT a function of the nucleus of a cell?
 - A. it controls the life processes of the cell
 - B. it translates genetic information for the manufacture of proteins
 - C. it stores and carries hereditary information
 - D. it is reservoir of energy for the cell
4. The dominant phase in the life cycle of a fern is the?
 - A. gametophyte
 - C. sporophyte
 - D. antheridium
5. Parental care is exhibited by
 - A. toads
 - B. snails
 - C. earthworms
 - D. birds

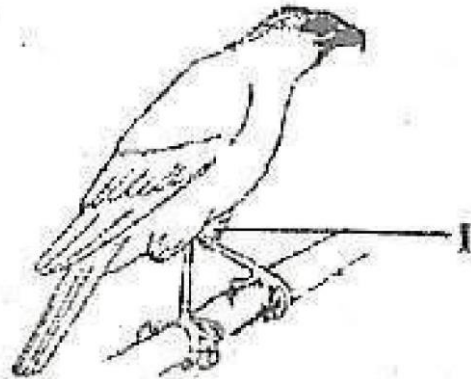
Use the diagram above to answer this question 6 and 7



B. prothallus

6. With respect to their decreasing dependence on aquatic conditions for reproduction, which of the following is the correct arrangement of the animals represented?
- A. I, IV, II and III
 - B. IV, III, II and I
 - C. I, II, IV and III
 - D. III, II, IV and I
7. Which of the animals represents the oldest creatures in terms of evolutionary history?
- A. III
 - B. II
 - C. I
 - D. IV
8. Which of the following groups of cells is devoid of true nuclei
- A. algae
 - B. monera
 - C. fungi
 - D. viruses

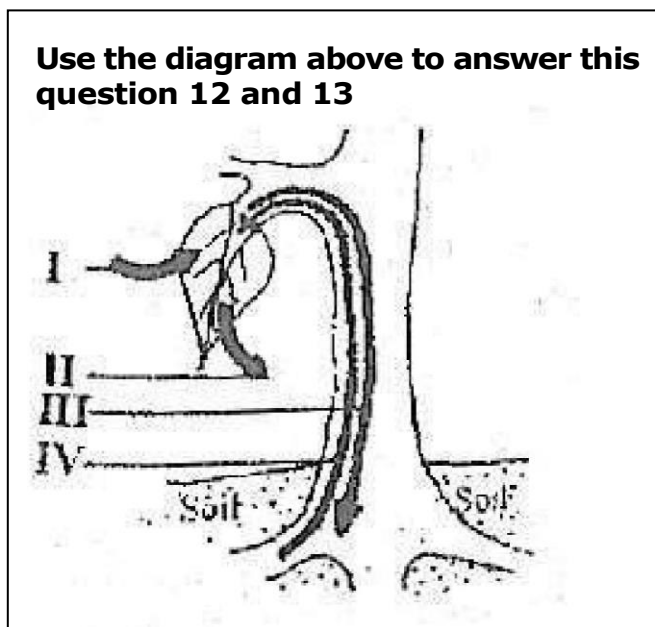
Use the diagram below to answer this question 9 and 10.



9. The main function of the feathers covering the part labelled I is to
- A. prevent ectoparasites from attacking the animal
 - B. generate heat to keep the animal warm
 - C. provide some power for flight
 - D. serve as insulator to maintain body heat
10. Based on the shape and structure of the beak and feet, the bird represented is likely to feed mainly on
- A. flesh

- B. fruits
- C. seeds
- D. nectar

11. Which of the following is true of the transverse section of a dicot system?
- A. the epidermis is completely encircled by the cortex
 - B. the xylem is more interiorly located than the phloem
 - C. the cambium lies between the cortex and the vascular bundles
 - D. the vascular bundles are randomly scattered within the cortex



12. The movement of material in the xylem and phloem tissues of the plant are represented by the arrows labelled
- A. III and IV respectively
 - B. II and I respectively
 - C. I and II respectively
 - D. I and III respectively
13. During photosynthesis, the arrow labelled II represents the
- A. escape of mineral salts
 - B. absorption of energy from the sun
 - C. release of carbon (IV) oxide
 - D. release of oxygen as a by-product
14. Which of the following is lacking in the diet of a person with kwashiorkor?
- A. vitamins
 - B. proteins
 - C. carbohydrates

15. The mode of nutrition of sun dew and bladder wort can be described as
- A. autotrophic
 - B. saprophytic
 - C. holozoic
 - D. chemosynthetic
16. When the mixture of a food substance and Benedict's solution was warmed, the solution changed from blue to black-red. This indicates the presence of
- A. reducing sugar
 - B. fatty acid
 - C. sucrose
 - D. amino acid
17. The primary structure responsible for pumping blood for circulation through the mammalian circulatory systems is the
- A. veins
 - B. right auricle
 - C. arteries
 - D. left ventricle
18. Circulation of blood to all parts of the body except the lungs is through
- A. the pulmonary artery
 - B. systemic circulation
 - C. the lymphatic system
 - D. pulmonary circulation
19. Yeast respire anaerobically to convert simple sugar to carbon (IV) oxide and
- A. alcohol
 - B. acid
 - C. oxygen
 - D. water
20. The sheet of muscle that separates the thoracic and the abdominal cavities is the
- A. diaphragm
 - B. intercostal muscle
 - C. pleural membrane
 - D. pericardium
21. The oily substance that lubricates the mammalian hair to keep it flexible and water repellent is secreted by the

- A. sweet glands
B. sebaceous glands
C. fatty cells
D. granular layer
22. The outer layer of the kidney where the Bowman's capsules are found is the
A. cortex
B. pelvis
C. medulla
D. pyramid
23. Which of the following stimuli is likely to elicit a nastic response in an organism?
A. Touch
B. Light intensity
C. Chemical substances
D. Gravity
24. In the male reproductive system of a mammal, sperm is stored in the
A. van deferens
B. urethra
C. epididymis
D. seminiferous tubules
25. Chemosynthetic organisms are capable of manufacturing their food from simple inorganic substances through the process of
A. oxidation
B. denitrification
C. reduction
D. phosphorylation
26. The part of the human gut that has an acidic content is the
A. stomach
B. duodenum
C. ileum
D. colon
- 27. I. Stomata → Spirogyro**
II. Alveoli → Earthworm
III. Malpighian tubule → Mammal
IV. Contractile vacuole → Protozoa.
Which of the above structures is correctly matched with the organisms in which it is found?
A. III
B. II
C. I
D. IV
28. A food chain always begins with a
A. consumer
B. decomposer
C. producer
D. primary consumer
29. Mycorrhizae promote plant growth by
A. absorbing inorganic ions from the soil
B. protecting it from infection
C. helping it to utilize atmospheric nitrogen
D. serving as a growth regulator
30. The barrier between maternal and foetal blood is the
A. placenta
B. liver
C. umbilical chord
D. uterine wall
31. The blood component that has the greatest affinity for oxygen is the
A. lymphocytes
B. leucocytes
C. erythrocytes
D. thrombocytes
32. Which of the following organisms is mainly found in the marine habitat?
A. Achatina
B. Tilapia
C. Dog fish
D. Tortoise
33. The two halves of the pelvic girdle are joined together at the
A. public symphysis
B. ilium
C. pubis
D. obturator foramen
34. **I.** Adoption of appropriate nocturnal habits
II. Burrowing
III. Adjusting their internal body temperature.
IV. Possession of many sweat pores.

- Which of the above are ways in which desert animals adapt to extreme heat of the environment?
A. I and IV only
B. II and III only
C. I and II only
D. I, II and III only
35. Low annual rainfall, sparse vegetation, high diurnal temperatures and cold nights are characteristic features of the
A. tropical rainforest
B. desert
C. montane forest
D. guinea savanna
36. The activity of an organism which affects the survival of another organism in the same habitat constitutes
A. an edaphic factor
B. an abiotic factor
C. a biotic factor
D. a physiographic factor
37. The average number of individuals of a species per unit area of the habitat is the
A. population density
B. population frequency
C. population size
D. population distribution
38. The vector for yellow fever is
A. Aedes mosquito
B. Anopheles mosquito
C. tsetse fly
D. blackfly
39. The loss of soil through erosion can be reduced by
A. watering
B. crop rotation
C. manuring
D. irrigation
40. The protozoan plasmodium falciparum is transmitted by
A. female Anopheles mosquitoes
B. female Aedes mosquitoes
C. female Culex mosquitoes
D. Female blackfly
41. A dilute solution of phenylthiocarbamide tastes bitter to some people and is tasteless to others. This is an example of
A. taste bud variation
B. discontinuous variation
C. morphological variation
D. continuous variation
- Use the diagram below to answer questions 42 and 43**
42. In which plantation are all the trees between the height of 2-4m?
A. III
B. II
C. I
D. I V
43. Which of the following is a true feature of plantation II?
A. it has the highest number of trees of about 2m high.
B. it has highest number of trees
C. it has the highest number of tall trees
D. the height of all its trees range between 2m and 6m
44. Thyroxine and adrenalin are examples of hormones which control
A. blood grouping
B. tongue rolling
C. behavioural patterns
D. colour variation
45. A pair of genes that control a trait is referred to as
A. an allele
B. recessive
C. dominant
D. a hybrid

46. The chromosome number of a cell before and after the process of meiosis is conventionally represented as
- A. $2n \rightarrow 2n$
 - B. $n \rightarrow n$
 - C. $n \rightarrow 2n$
 - D. $2n \rightarrow n$
47. If both parents are heterozygous for a trait, the probability that an offspring will be recessive for that trait is
- A. $\frac{3}{4}$
 - B. $\frac{1}{2}$
 - C. $\frac{1}{4}$
 - D. 1
48. At what stage in the life history of a mammal is the sex of an individual set?
- A. at adolescence
 - B. at puberty
 - C. at birth
 - D. at conception
49. The main distinguishing features between the soldier termite and other members of the caste are the
- A. presence of wings, possession of a small head and large thorax
 - B. presence of wings, possession of a large thorax and a small head
 - C. absence of wings, possession of strong mandibles and a large head
 - D. absence of wings, possession of big head and the absence of mandible
50. The flippers of a whale and the fins of a fish are examples of
- A. divergent evolution
 - B. coevolution
 - C. continuous variation
 - D. convergent evolution

ANSWER KEYS

- 1. C
- 2. C
- 3. D
- 4. C
- 5. D
- 6. B
- 7. D
- 8. D
- 9. D
- 10. A
- 11. B
- 12. A
- 13. D
- 14. B
- 15. C
- 16. A
- 17. C
- 18. B
- 19. A
- 20. A
- 21. B
- 22. A
- 23. C

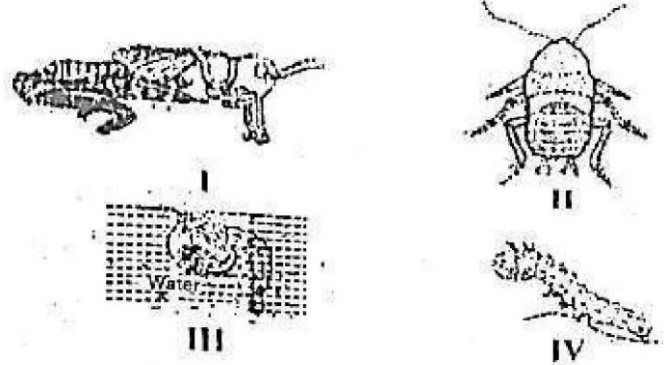
- 26. A
- 27. D
- 28. C
- 29. A
- 30. A
- 31. C
- 32. C
- 33. A
- 34. C
- 35. D
- 36. A
- 37. C
- 38. B
- 39. A
- 40. A
- 41. B
- 42. A
- 43. A
- 44. C
- 45. A
- 46. D
- 47. C
- 48. B
- 49. C
- 50. A

- 24. C
- 25. D

UTME 2011 BIOLOGY QUESTIONS

1. Which Question Paper Type of Biology is given to you?
 - A. Type A
 - B. Type B
 - C. Type C
 - D. Type D
2. The function of the red head in male Agama lizards is to
 - A. conceal and camouflage the animal from predators
 - B. scare other males from the territory
 - C. attract female lizards for mating purposes
 - D. warn predators of the distastefulness of the animal
3. In which of the following species is the biomass of an individual the smallest?
 - A. Agama sp.
 - B. Bufo sp.
 - C. Spirogyra sp.
 - D. Tilapia sp.
4. Seed plants are divided into
 - A. tracheophytes and ferns
 - B. angiosperms and gymnosperms
 - C. monocotyledons and dicotyledons
 - D. thallophytes and bryophytes
5. In which of the following groups of vertebrates is parental care mostly exhibited?
 - A. Reptilia
 - B. Amphibia
 - C. Aves
 - D. Mammalia

Use the Diagrams below to answer questions 6 to 8

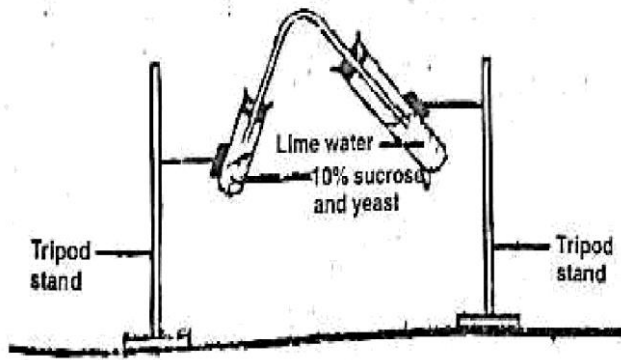


6. Which of the organisms represented are notable agricultural pests?
 - A. II and IV
 - B. I and IV
 - C. II and III
 - D. I and III
7. An economic importance of the organism represented by IV is that
 - A. it transmits water borne disease to humans
 - B. it is destructive to farm crops
 - C. its faeces pollutes drinking water
 - D. it helps in the control of mosquito larvae
8. The adult form of iii is a vector of
 - A. sleeping sickness
 - B. river blindness
 - C. cholera
 - D. elephantiasis
9. The adaptive importance of nuptial flight from termite colonies is to
 - A. disperse the reproductives in order to establish new colonies
 - B. provide abundant food for birds and other animals during the early rains
 - C. ensure cross-breeding between members of one colony and another

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D. expel the reproductives so as to provide enough food for other members

Use the diagram below to answer question 10 and 11



10. The gas evolved in the process is
- carbon (IV) oxide
 - nitrogen
 - oxygen
 - carbon (II) oxide
11. The experimental set-up above is used to demonstrate the process of
- diffusion
 - photosynthesis
 - fermentation
 - plasmolysis
12. Which of the following can cause shrinkage of living cells?
- Hypotonic solution
 - Isotonic solution
 - Deionized water
 - Hypertonic solution
13. Which of the following is true of leucocytes?
- they are respiratory pigments
 - they are most numerous and ramify all cells
 - they are large and nucleated
 - they are involved in blood clotting
14. The conversion of a nutrient into a molecule in the body of a consumer is referred to as
- digestion
 - assimilation
 - absorption
 - inhibition
15. The ability of living organism to detect and respond to changes in the environment is referred to as
- locomotion irritability
 - growth

F. taxis

16. In mammals, the exchange of nutrients and metabolic products occurs in the
- lungs
 - oesophagus
 - trachea
 - lymph
17. An example of an endospermous seed is
- maize grain
 - cashew nut
 - cotton seed
 - been seed

18. **I. Parasitism → Sundew.**
II. Autotrophism → Amoeba.
III. Saprophytism → Alga.
IV Heterotrophism → Agama.

Which of the above modes of nutrition is correctly matched with the organism that exhibits it?

- I I
- III
- I I
- I

Use the following information to answer the questions 19 and 20.

- Test tube containing cane sugar and water.**
- Test tube containing cane sugar and diluted acid.**
- Test tube containing cane sugar and its degrading enzyme.**

19. In which of the test tubes will glucose be detected after complete hydrolysis?
- I and II only
 - II and III only
 - I only
 - I, II and III
20. The enzyme involved in the hydrolysis is
- rennin
 - erepsin

- C. sucrase
D. maltase
21. The part of the mammalian ear responsible for the maintenance of balance is the
A. cochlea
B. pinna
C. perilymph
D. ossicles
22. The path followed by air as it passes through the lungs in mammals is
A. trachea → bronchi → bronchioles → alveoli
B. bronchi → trachea → alveoli → bronchioles
C. trachea → bronchioles → bronchi → alveoli
D. bronchioles → alveoli → bronchi → trachea
23. The movement response of a cockroach away from a light source can be described as
A. positive phototaxis
B. negative phototaxis
C. negative phototropism
D. positive phototropism
24. The vascular tissues in higher plants are responsible for
A. the movement of food and water
B. suction pressure
C. transpiration pull
D. the transport of gases and water
25. Which of the following organs regulates the levels of water, salts, hydrogen ions and urea in the mammalian blood?
A. Liver
B. Kidney
C. Bladder
D. Colon
26. The sequence of the one-way gaseous exchange mechanism in a fish is
A. operculum → gills → mouth
B. gills → operculum → mouth
C. mouth → operculum → gills
D. mouth → gills → operculum
27. The type of asexual reproduction that is common to both Paramecium and protists is
A. budding
B. sporulation
C. fragmentation
D. fission
28. In nature, plants and animals are perpetually engaged in mutualism because
A. they are rivals
B. all animals rely on food produced by plants
C. they utilize respiratory wastes of each other
D. they are neighbours
29. In an experiment to determine the percentage of humus and water in a soil sample, the following results were obtained:
- Weight of the evaporating basin alone = 80.5g**
Weight of basin and soil = 101.5g
Weight after drying the soil in the oven = 99.0g
Weight of basin and roasted soil = 95.5g
- The percentage of humus in the soil sample is
A. 16.7%
B. 17.6%
C. 26.7%
D. 16.2%
30. An example of a filter-feeding animal is
A. shark
B. butterfly
C. whale
D. mosquito
31. Which of the following is a feature of the population pyramid of a developing country?
A. long lifespan
B. low birth rate
C. low death rate